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10/826,881	04/16/2004	Bjorn-Oliver Eversmann	V0195.0013	9887

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DICKSTEIN SHAPIRO LLP
1177 AVENUE OF THE AMERICAS 6TH AVENUE
NEW YORK, NY 10036-2714

EXAMINER	
PATEL, TAYAN B	
ART UNIT	PAPER NUMBER
1795	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/826,881	EVERSMANN ET AL.	
	Examiner	Art Unit	
	TAYAN PATEL	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/16/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-11, 13-15, 19 and 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al (US 6512543) in view of Hurst et al (US 6646912) in view of Aufrichtig et al (US 2003/0058998) in view of Hashimoto et al (US 2002/0039743).

Regarding claim 1, Kuroda et al describes a sensor arrangement (seen figure 1 – the arrangement of a physical quantity distribution sensor) comprising a plurality of rows, n, in a first direction, a plurality of column lines, m, in at least a second direction (See column 6, lines 1-62). In addition, Kuroda et al describes a plurality of sensors

(See abstract) and a sensor element, 35 & 34, which influences current flow (See column 6, lines 1-62).

Kuroda further describes a circuit matrix (See figure 1), but does not expressly describe a coupling device, for coupling at least one row line to a respective column line.

Hurst et al further describes a matrix circuitry (See figure 7) wherein at least one coupling device, 64 (diode) and 66 (fuse) in combination, for electrically coupling at least one row line to a respective column line (See column 8, lines 35-67) in order to provide a conductive state between the row and column (See column 8, lines 52-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the coupling device in Hurst et al in the apparatus of modified Kuroda et al in order to provide a conductive state between the row and column.

Kuroda et al further describes a matrix of circuitry (See figure 1) but does not describe the detector electrically coupled to a respective end section of at least a portion of the row lines and of at least a portion of the column lines, the detector detecting a respective accumulative current flow from the individual current flows provided by the sensor arrays of the lines.

Aufrichtig et al describes a matrix of circuitry (See figure 2) wherein a detector, 27, is coupled to the rows and lines in order to apply a bias voltage to the rows and columns respectively (See page 2, paras 19-20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the detector in Aufrichtig et al in the apparatus of Kuroda et al in order to apply a bias voltage to the rows and columns respectively.

Kuroda et al further describes a sensor having a matrix (see figure 1) but modified Kuroda et al does not describe a decoding device coupled to the row lines and the column lines, wherein the decoding device evaluating at least a portion of the accumulative electric current flows, fed to the decoding device via the row lines and the column lines to determine at which of the sensor elements a sensor signal is present.

Hashimoto et al describes a detection sensor having a matrix figuration (See figure 1) wherein a decoder, 1907 is provided in order to control the on-off on the signal lines (See pages 9-10, paras 124-127).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the decoder in Hashimoto et al in the apparatus of modified Kuroda et al in order to control the on-off on the signal lines.

Regarding claim 2, Hashimoto et al further describes the decoder, 1907, divided into a row decoding and column decoding device because all of the signal lines are received in the decoder (See figure 18). Because this claim is an apparatus claim, the limitations addressing, determining information from the respective lines and a joint evaluation, do not further limit the structural limitations. As such, they will not be given substantive weight.

Regarding claim 3, Hashimoto et al further describes the decoding device, 1907 (See figure 18). Because the claim is an apparatus claim, the limitations addressing,

the determining of sensor elements by Fourier transforms, do not further limit the structural limitations. As such, they will not be given substantive weight.

Regarding claim 4, Hashimoto et al further describes the decoding device. Because the determination of a sensor signal presence is directed to function rather than structure, they do not further limit the apparatus claim. See MPEP 2114.

Regarding claims 5-8, the determination of sensor signals via temporal and/or spatial reference signals or a predetermined item of reference information does not impart further structure to the decoding device. As such, the functional limitations do not further limit the apparatus claim. See MPEP 2114.

Regarding claim 9, Hashimoto describes a decoding device, 1907. Because the configuration is functional, the limitation does not impart further structure, thus will not be given substantive weight in the apparatus claim.

Regarding claim 10, Kuroda et al describes a voltage source, Vdd, coupled to the rows and lines. See figure 1, See also column 6, lines 26-45.

Regarding claim 11, modified Kuroda et al describes all of the claimed limitations of claim 1, wherein Hurst et al further describes the coupling device as a current source (because it comprises a diode). Kuroda et al describes the sensor element (see figure 1).

Regarding claim 13, modified Kuroda et al describes all of the claimed limitations as discussed with respect to claim 1 above, but does not describe a calibration device.

Aufrichtig et al describes a calibration device, 100, in order to detect inaccuracies by reading an analyzing data from detector. See page 3, para 35; See also figure 3.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the calibration device in Aufrichtig et al in the apparatus of modified Kuroda et al in order to detect inaccuracies by reading an analyzing data from detector.

Regarding claim 14, modified Kuroda et al describes all of the claimed limitations of claim 1 above, but does not describe the coupling device having a deactivation function.

Hurst et al describes a deactivation function by providing blown diodes (inactivated) in order to stop current. See figure 13; See also column 8, lines 35-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the blown diode in Hurst et al in the apparatus of modified Kuroda et al in order to stop current.

Regarding claim 15, modified Kuroda et al discloses all of the claimed limitations as discussed with respect to claim 13 above, but does not describe the calibration device having a calibration transistor, having a first source/drain terminal coupled to the respective row line, a second source/drain terminal coupled to the gate terminal of the detection transistor and also to a capacitor coupled to the assigned sensor element, and a gate terminal coupled to a further column, and an electrical calibration voltage applied tot he gate terminal of the calibration by means of the further column line.

Aufrichtig et al describes a calibration transistor, 44, having a first and second source/drain terminal, V & -V. In addition, the detection transistor (also, 44, since there are a plurality) is coupled to a gate terminal of the voltages, V & -V. Also, a capacitor,

42, is coupled to the assigned to the sensor element, and calibration voltage, V is applied to the gate terminal in order to perform a variety of sequences such as turning off and on. See page 2, paras 19-20.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the elements in Aufrichtig et al in the apparatus of modified Kuroda et al in order to perform a variety of sequences such as turning off and on.

Regarding claim 19, Kuroda et al describes a sample hold device, 33 (photoelectric storage/conversion section) which stores electric current. See column 6, lines 10-35

Regarding claims 23-25, modified Kuroda et al describes a plurality of sensor arrays in rectangular fashion; wherein the rows and lines form right angles; and the sensor arrays are honeycomb-shaped. See figure 1 of Kuroda et al.

Regarding claim 26, modified Kuroda et al does not describe the row lines and column lines forming 60 degree angles with one another.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use different angle sizes in order to maximize the number of sensor arrays in a particular area. See MPEP 2144.04 I - Aesthetic design changes.

Regarding claim 27, modified Kuroda et al further describes all of the claimed limitations of claim 1 above, but does not describe an arrangement divided into at least two regions that can be operate independently of one another

Hurst et al describes an arrangement divided into at least two regions that can be operated independently of one another (independent sense lines) in order to write

independent data (See column 7, lines 27-54). The predetermination of which two regions is operated is functional, thus adding no structural limitation to the claim and will not be given substantive weight.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the independent sense lines in Hurst et al in the apparatus of modified Kuroda et al in order to write independent data.

4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al (US 6512543) in view of Hurst et al (US 6646912) in view of Aufrichtig et al (US 2003/0058998) in view of Hashimoto et al (US 2002/0039743) as applied to claim 1 above and further in view of Murakawa et al (US 6667632).

Regarding claim 12, Kuroda et al describes a sensor matrix (See abstract) but modified Kuroda et al does not describe the coupling device comprising a detection transistor having a first source/drain terminal coupled to one of the row lines, a second source/drain terminals coupled to one of the column lines, and a gate terminal coupled to the sensor element assigned to the at least one coupling device.

Murakawa et al describes sensor in a computer (semiconductor device) further discussing by incorporation a gate signal generator; a source signal generator; a gate signal line selector, and a thin film transistor connected to the gate signal line (first source/drain terminal) and the source signal line (2^{nd} source drain terminal) at a non-contact condition in order to provide an active matrix array. See column 1, lines 40-55.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the components in Murakawa et al in the apparatus of modified Kuroda et al in order to provide an active matrix array.

5. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al (US 6512543) in view of Hurst et al (US 6646912) in view of Aufrichtig et al (US 2003/0058998) in view of Hashimoto et al (US 2002/0039743) as applied to claim 1 above and further in view of Bailey (US 3668543).

Regarding claims 16-18, Kuroda et al further discloses a system with sensors (See figure 1), but does not expressly describe an amplifier element for amplifying individual electric current flow wherein the amplifier element has a bipolar transistor having a collector terminal, an emitter terminal, and a base terminal coupled to the second source/drain terminal of the detection transistor.

Bailey describes a system with sensors (See column 1, lines 20-28) wherein the main amplifier has a bipolar transistor pair having a collector/input terminals, 12 and 13, an emitter terminals, 15 and 16, and base terminal terminals, 10 and 11, in order to provide very high impedance if desired (See column 3, lines 10-24).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the amplifier, transistor, and terminals in Bailey in the apparatus of modified Kuroda et al in order to provide very high impedance if desired.

6. Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al (US 6512543) in view of Hurst et al (US 6646912) in view of Aufrichtig et al

(US 2003/0058998) in view of Hashimoto et al (US 2002/0039743) as applied to claim 1 above and further in view of Tsukada et al (US 5250168).

Regarding claims 20-21, Kuroda et al further describes sensor elements in a circuit (see figure 1), but modified Kuroda et al fails to expressly address ISFET and MOSFET.

Tsukada et al describes a sensor device in a circuit wherein the sensor is MOSFET or ISFET in order to provide protection to the sensor circuit (See column 3, lines 38-52).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the sensor elements in Tsukada et al in the apparatus of modified Kuroda et al in order to provide protection to the sensor circuit.

7. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al (US 6512543) in view of Hurst et al (US 6646912) in view of Aufrichtig et al (US 2003/0058998) in view of Hashimoto et al (US 2002/0039743) as applied to claim 1 above and further in view of Reimer (US 6593588).

Regarding claim 22, Kuroda et al further describes sensors in a device (See figure 1), but modified Kuroda does not expressly describe a sensor which is sensitive to electromagnetic radiation.

Reimer describes sensors able to detect electromagnetic radiation levels in order to determine ionizing radiation in the apparatus (See column 4, lines 28-50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the sensors in Reimer in the apparatus of modified Kuroda et al in order to determine ionizing radiation in the apparatus.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAYAN PATEL whose telephone number is (571)272-9806. The examiner can normally be reached on Monday-Thursday, 8 AM-6 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on (571) 272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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ALEXA D. NECKEL
SUPERVISORY PATENT EXAMINER